REMARKS

Applicant respectfully requests that the above-identified application be re-examined.

The Office Action mailed August 2, 2006 (hereinafter "Office Action") rejected Claims 1-10 under 35 U.S.C. § 101 as being directed to non-statutory subject matter. Remarks accompanying this rejection state that Claim 1 recites an API replay tool for creating API calls, comprising a symbol table for mapping references and a call builder for creating API call code sequence. Since the symbol table and the call builder are software entities claimed without hardware embodiments to support the realization of the functionality of the symbol table and the call builder, the remarks conclude that the claim amounts to software entities merely listed as descriptive functional elements, and that without reasonable possibility that their functionality can be realized via execution, absent of any hardware machine to enable such execution in order to yield real world results. In response, applicant has amended independent Claim 1 by adding the limitation "A computing device containing" to the preamble. Applicant has also amended dependent Claims 2-10 accordingly. Applicant submits that the foregoing amendments render Claims 1-10 statutory and requests that the 35 U.S.C. § 101 rejection of Claims 1-10 be withdrawn.

The Office Action objected to Claims 19-23 because of the following informality: the recitation of "the computer-executable instructions facilitating performing..." needs to be readjusted so the language construct in that context provides only one action, either "performing" or "facilitating." In response, applicant has amended Claim 19 by deleting "facilitating." Applicant has also amended Claims 20-23 by deleting "facilitating" and adding "performing the steps of." Applicant submits that the forgoing amendments render the objection to Claims 19-23 moot and requests that the objection of Claims 19-23 be withdrawn.

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The Office Action rejected Claims 1-9, 11-17, and 19-25 under 35 U.S.C. § 102(e) as being anticipated by U.S. Patent No. 6,625,804, issued to Ringseth et al. (hereinafter "Ringseth"). The Office Action further rejected Claims 1, 10-11, 18-19, and 26 under 35 U.S.C. § 102(e) as being anticipated by U.S. Published Patent Application No. 2003/0208743 issued to Chong et al. (hereinafter "Chong"). Applicants respectfully disagree because Ringseth and Chong do not teach, suggest, or describe all claim limitations, which are discussed in detail hereinafter.

Prior to discussing in detail why applicants believe that all of the claims in the present application are allowable in view of the cited and applied reference, a brief description of the disclosed subject matter and a brief description of the teachings of the cited and applied references are provided. The following discussions of the disclosed subject matter and the cited and applied reference are not provided to define the scope or interpretation of any of the claims of this application. Instead, these discussions are provided to help the United States Patent and Trademark Office better appreciate important claim distinctions discussed thereafter.

Disclosed Subject Matter

Generating and executing a sequence of API calls for a variety of purposes, including, testing the APIs on a new platform or diagnosing an error through the use of a test program is disclosed. The test program focuses upon the design and specification aspects of testing rather than time consuming programming of a test program that will carry out the test. The test program or API call replay tool facilitates creating and submitting API calls based upon input API call records. The API call replay tool ensures that the API calls, executed from potentially a sequence of logged API calls, replay in a meaningful manner. This is generally accomplished by translating addresses (memory references) specified by recorded API calls into addresses within the API call replay tool's memory space. More particularly, the API call replay tool includes a

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symbol table for mapping references within an input API call record into a memory space allotted to the API call replay tool. Such mapping occurs, for example, from a recorded address to a replay address space allocated to a thread with which the API call is associated. After mapping the addresses/references into the replay address space, an API call builder utilizes the address mapping relations stored within the symbol table to create a call code sequence for invoking the API call in the replay environment of the API call replay tool. The memory references within the API call code sequence are specified according to a set of mapping entries within the symbol table.

Ringseth

Ringseth purportedly discloses a unified event programming model that standardizes event programming for disparate eventing protocols. The unified event programming model simplifies programming events for different object types by abstracting away protocol-specific details. A protocol-independent compiler construct allows a programmer to specify events for an event source. Other protocol-independent compiler constructs allow a programmer to specify how to hook and unhook an event receiver from events. Based upon protocol-independent compiler constructs and an eventing protocol type value, a compiler generates an event source or event receiver implementation that is specific to an eventing protocol. Ringseth does not disclose a symbol table for mapping references within an input API call record into a memory space allocated to the API call replay tool and an API call builder for creating an API call code sequence.

Chong

Chong purportedly discloses a workflow code generator for generating executable code for multi-channel and/or multi-modal applications. The code generator may include a parser for reading application input files and creating internal representations of declarative statements

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within the input files. The code generator may further include a model analyzer, which processes the internal model to detect errors, perform optimization, and prepare for outputting the result. The code generator uses a symbol or mapping table for storing references to resources that have been used by the input application. The code generator assigns code fragments to object patterns, resolves data object references by referring to mapping table, and traverses the objects and emits code assigned to the objects. Chong does not disclose a symbol table for mapping references within an input API call record into a memory space allocated to the API call replay tool.

Claim Rejections Under 35 U.S.C. § 102(e) - Ringseth

As indicated above, Claims 1-9, 11-17, and 19-25 were rejected under 35 U.S.C. § 102(e) as being anticipated by Ringseth. Applicant respectfully disagrees.

Claims 1-9

Independent Claim 1, as amended, reads as follows:

> 1. A computing device containing an application program interface (API) replay tool for creating and submitting API calls based upon input API call records, the API replay tool comprising:
>
> a symbol table for mapping references within an input API call record into a memory space allocated to the API replay tool; and
>
> an API call builder for creating an API call code sequence for invoking an API call corresponding to the input API call record, wherein memory references within the APT call code sequence are specified according to a set of mapping entries within the symbol table.

Applicant submits that Ringseth does not teach each and every limitation of independent Claim 1. More specifically, Ringseth does not teach "a symbol table for mapping references within an input API call record into a memory space allocated to the API replay tool" and "an API call builder for creating an API call code sequence for invoking an API call corresponding to the input API call record, wherein memory references within the APT call code sequence are

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specified according to a set of mapping entries within the symbol table" as recited in Claim 1.

The Office Action states on Page 4 that Ringseth discloses a symbol table 430 in Figure 4, UEPM source in Figures 5 and 7-8, event framework in Figure 3, state 434 and Attribute provider 470 in Figures 4 and 7-8a, Table 1 at Col. 8, Table 2 at Col. 9, and Col. 6, line 40 - Col. 7, line 60, and apparently concludes that the first limitation of Claim 1, namely, "a symbol table for mapping references within an input API call record into a memory space allocated to the API replay tool" is met by these portions of Ringseth. Applicant disagrees. Ringseth's symbol table is used to list symbol names and type information used in a source file with UEPM constructs along with related characteristics (Col. 11, lines 53-56.) Nowhere does Ringseth disclose a symbol table for mapping references let alone a symbol table for mapping references within an input API call record into a memory space allocated to the API replay tool as recited in Claim 1.

Further, the Office Action states on Page 4 that Ringseth discloses "_interface" in Figures 10A-B, steps 524-528 and step 570 in Figure 5, Figure 6, Col. 11, lines 49-57, and Col. 12, line 41 - Col. 13, line 12, and apparently concludes that the second limitation of Claim 1, namely, "an API call builder for creating an API call code sequence for invoking an API call corresponding to the input API call record, wherein memory references within the API call code sequence are specified according to a set of mapping entries within the symbol table" is met by these portions of Ringseth. Again applicant disagrees. As best as applicant can determine from the seemingly unrelated laundry list of elements, drawing figures, and text sections of Ringseth listed above, the Office Action remarks are comparing "_interface" in Figures 10A-B with the API call builder recited in Claim 1. Col. 18, line 38-Col. 11, line 7 which describes Figures 10A-B states that the "_interface" keyword semantically is a struct which contains pure virtual function members (virtual function members for which no

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implementation is specified that must be overridden in a derived class in order to create an object.) Nowhere does Ringseth disclose that "_interface" creates an API call code sequence for invoking an API call corresponding to the input API call record. Further, as best as applicant can determine, the Office Action remarks conclude that step 528 in Figure 5, Col. 11, lines 49-57, and Col. 12, line 41 - Col. 13, line 12 discloses "memory references within the API call code sequence are specified according to a set of mapping entries within the symbol table." Applicant again disagrees. Figure 5 shows a technique for processing C++ source code with UEPM constructs in a compiler environment such as that shown in Figure 4. If the current element is for a C++ construct, the compiler converts (step 526) that element into an intermediate language. As appropriate, the compiler handles (step 528) the element, for example, by placing a node in the parse tree, adding an entry to the symbol table, injecting code, or transforming the parse tree (Col. 13, lines 37-55.) Col. 11, lines 49-57 states in pertinent sections that a converter module 424 parses a sequence of characters in an input file into an intermediate representation and places entries into a symbol table 430 that lists symbol names and type information used in the input file along with related characteristics. Col. 12, line 41 - Col. 13, line 12 states in pertinent sections that an output module 478 communicates back to the compiler 420 to effect changes based upon the attributes. The output module directly manipulates the internal compiler structures such as the symbol table 430 and the parse tree 432, creates symbols, adds to the parse tree, transforms the parse tree, etc. Nowhere does Ringseth disclose that the memory references within the input file are specified according to the mapping entries within the symbol table.

Since Ringseth does not teach, suggest, or describe all of the limitations of Claim 1, applicant submits that Claim 1 is not rejectable under 35 U.S.C. § 102(e) based on Ringseth and requests that this ground of rejection be withdrawn and Claim 1 allowed. Claims 2-9 depend directly or indirectly from independent Claim 1 and include all of the recitations of the base

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claim. Accordingly, Claims 2-9 are submitted to be allowable for at least the same reasons that Claim 1 is allowable.

Claims 11-17

Independent Claim 11 reads as follows:

> 11. A method for replaying API calls based upon input API call records, the method comprising:
> mapping references within an input API call record into a memory space allocated to an API call replay tool; and
> creating an API call code sequence for invoking an API call corresponding to the input API call record, wherein memory references within the API call code sequence are specified according to a set of mapping entries.

The Office Action remarks state that Claim 11 includes all limitations included in the subject matter claimed in Claim 1 and is hence rejected using the corresponding rejection as set forth in Claim 1. Applicant disagrees. Ringseth does not teach each and every limitation of independent Claim 11. As noted above with respect to Claim 1, Ringseth does not disclose "mapping references within an API call record into a memory space allocated to an API call replay tool." Further, Ringseth does not disclose "creating an API call code sequence for invoking an API call corresponding to the input API call record" and "wherein memory references within the API call code sequence are specified according to a set of mapping entries."

Since Ringseth does not teach, suggest, or describe all of the limitations of Claim 11, applicant submits that Claim 11 is not rejectable under 35 U.S.C. § 102(e) based on Ringseth and request that this ground of rejection be withdrawn and Claim 11 be allowed. Claims 12-17 depend directly or indirectly from independent Claim 11 and include all of the recitations of the base claim. Accordingly, Claims 12-17 are submitted to be allowable for at least the same reasons that Claim 11 is allowable.

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Claims 19-25

Independent Claim 19, as amended, reads as follows:

> 19. A computer-readable medium including computer-executable instructions facilitating replaying API calls based upon input API call records, the computer-executable instructions performing the steps of:
>
> mapping references within an input API call record into a memory space allocated to an API call replay tool; and
>
> creating an API call code sequence for invoking an API call corresponding to the input API call record, wherein memory references within the API call code sequence are specified according to a set of mapping entries.

The Office Action states that Claim 19 is a computer-readable medium version of Claim 11 and includes the same subject matter rejected therein and is hence rejected using the corresponding rejection as set forth in Claim 11. Again applicant disagrees. Ringseth does not teach each and every limitation of independent Claim 19. As noted above with respect to Claim 1, Ringseth does not disclose "mapping references within an API call record into a memory space allocated to an API call replay tool." Further, Ringseth does not disclose "creating an API call code sequence for invoking an API call corresponding to the input API call record" and "wherein memory references within the API call code sequence are specified according to a set of mapping entries."

Since Ringseth does not teach, suggest, or describe all of the limitations of Claim 19, applicant submits that Claim 19 is not rejectable under 35 U.S.C. § 102(e) based on Ringseth and request that this ground of rejection be withdrawn and Claim 19 be allowed. Claims 20-25 depend directly or indirectly from independent Claim 19 and include all of the recitations of the base claim. Accordingly, Claims 20-25 are submitted to be allowable for at least the same reasons that Claim 19 is allowable.

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Claim Rejections Under 35 U.S.C. § 102(e) - Chong

As indicated above, Claims 1, 10-11, 18-19, and 26 were rejected under 35 U.S.C. § 102(e) as being anticipated by Chong. Applicants respectfully disagree.

Claims 1 and 10

Applicant submits that Chong does not teach each and every limitation of independent Claim 1. More specifically, Chong does not teach "a symbol table for mapping references within an input API call record into a memory space allocated to the API replay tool" as recited in Claim 1.

The Office Action states on Page 6 that Chong discloses a symbol table in Figure 11, Workflow input file in Figure 6B and 12, Input file in Figure 11, Model analyzer 114 in Figure 11, Internal model 206 in Figures 8-9, Paragraph 0113 on Page 8, and Paragraphs 0193-0195 on Page 13, and apparently concludes that the first limitation of Claim 1, namely, "a symbol table for mapping references within an input API call record into a memory space allocated to the API replay tool" is met by these portions of Chong. Applicant disagrees. Symbol table 118 of code generator 110 is for storing references to resources that have been used by the input application (Paragraph 0109 on Page 8.) The code generator reads the input file and converts the declarative statements into an intermediate form that is more easily understood by using machine code. The code generator generates code from XML files, which is an in-memory image of objects that comprise a workflow. The objects include workflow variables, states, transitions, etc. (Paragraph 0113 on Page 8.) Since one goal of the code generator is to purportedly make it simple for users to customize the generated code and make the code perform as necessary, the view has interfaces that simulate request variables that can be extended to handle passing Java objects back rather than just simple strings. Displaying the view involves creating a new instance of the view. The instantiated view object is used and then dereferenced

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so that it can be garbage collected (Paragraph 0193-0194 on Page 13.) Nowhere does Chong disclose a symbol table for mapping references let alone a symbol table for mapping references within an input API call record into a memory space allocated to the API replay tool as recited in and required by Claim 1.

Since Chong does not teach, suggest, or describe all of the limitations of Claim 1, applicant submits that Claim 1 is not rejectable under 35 U.S.C. § 102(e) based on Chong and requests that this ground of rejection be withdrawn and Claim 1 be allowed. Claim 10 depends directly from independent Claim 1 and includes all of the recitations of the base claim. Accordingly, Claim 10 is submitted to be allowable for at least the same reason that Claim 1 is allowable.

Claims 11 and 18

The Office Action states that Claim 11 includes all limitations included in the subject matter claimed in Claim 1 and is hence rejected using the corresponding rejection as set forth in Claim 1. Applicant disagrees. Chong does not teach each and every limitation of independent Claim 11. As noted above with respect to Claim 1, Chong does not disclose "mapping references within an API call record into a memory space allocated to an API call replay tool."

Since Chong does not teach, suggest, or describe the foregoing limitation of Claim 11, applicant submits that Claim 11 is not rejectable under 35 U.S.C. § 102(e) based on Chong and request that this ground of rejection be withdrawn and Claim 11 be allowed. Claim 18 depends directly from independent Claim 11 and includes all of the recitations of the base claim. Accordingly, Claim 18 is submitted to be allowable for at least the same reason that Claim 11 is allowable.

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Claims 19 and 26

The Office Action states that Claim 19 is a computer-readable medium version of Claim 11 and includes the same subject matter rejected therein and is hence rejected using the corresponding rejection as set forth in Claim 11. Again applicant disagrees. Chong does not teach each and every limitation of independent Claim 19. As noted above with respect to Claim 1, Chong does not disclose "mapping references within an API call record into a memory space allocated to an API call replay tool."

Since Chong does not teach, suggest, or describe the foregoing limitation of Claim 19, applicant submits that Claim 19 is not rejectable under 35 U.S.C. § 102(e) based on Chong and request that this ground of rejection be withdrawn and Claim 19 be allowed. Claim 26 depends directly from independent Claim 19 and includes all of the recitations of the base claim. Accordingly, Claim 26 is submitted to be allowable for at least the same reason that Claim 19 is allowable.

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CONCLUSION

In view of the foregoing remarks, applicants respectfully submit that the above-identified application is in condition for allowance. Re-consideration and re-examination of the application, and allowance of the claims (Claims 1-26) at an early date are solicited. If the Examiner has any questions or comments concerning this matter, the Examiner is invited to contact the undersigned at the number provided below.

Respectfully submitted,

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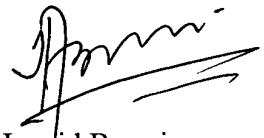

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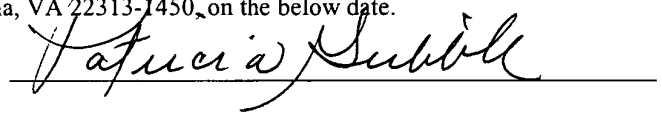
Date: Nov. 2, 2006 

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